# User Manual

# SUH4

## PTN 4K HDMI Splitter 1x4

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**Version: SUH4_2014V1.0**

# SAFETY PRECAUTIONS

To insure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

**NOTICE:** Pictures shown in this manual is for reference only, different model and specifications are subject to real product.

This manual is for operation instruction only, not for any maintenance usage. The functions described in this version are updated till September 2014. Any changes of functions and parameters since then will be informed separately. Please refer to the dealers for the latest details.

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**All product function is valid till 2014-09-22.**

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# 1. Introduction

## 1.1 Introduction to SUH4

SUH4 is a HDMI splitter featuring the capability to repeat HDMI or DVI source to 4 displays synchronously. Compliance with HDMI 1.4& HDCP1.4, SUH4 provides comprehensive resolution capacities up to 4K& 1080p 3D. It's capable to automatically recognize the resolution and HDCP compliant status of the input signal. Input signal will be automatically equalized for reliable transmission with proper EDID Management.

Moreover, SUH4 supports convenient online update through USB port.

## 1.2 Features

- 4 simultaneous HDMI outputs
- Support Hot-plug
- Compliant with HDMI 1.4, capable to transmit 1080p 3D& 4K signal
- Transmit 1080p HDMI up to 15m
- High bandwidth: 10.2Gbps
- HDCP compliant
- Auto-identify input resolution
- Support EDID management, automatically adopt the resolution of the first detected display from port 1~4
- Intuitive indicator for connection status& input HDCP compliance status
- Convenient online firmware update

## 1.3 Package List

- 1 x SUH4
- 2 x Mounting ears (separate from SUH4)
- 4 x Screws
- 4 x Plastic cushions
- 1 x Power Adapter (DC 5V 1A)
- 1 x User Manual

**Notes**：Please confirm if the product and the accessories are all included, if not, please contact with the dealers.

# 2. Panel Description

## 2.1 Front Panel

| No. | Name | Description |
|---|---|---|
| ① | Power indicator | Illuminate red once powered on |
| ② | Input HDCP compliant Indicator | Indicate the HDCP compliant status of the input signal<br>➢ Iluminate green when the input signal is with HDCP<br>➢ Blink green when the input signal is not with HDCP<br>➢ Remain off when there is no input signal |
| ③ | Output signal Indicators | Illuminate green when there is HDMI output, correspond to HDMI OUTPUT 1~4 separately |
| ④ | FIRMWARE | USB port, used for firmware update. |

**Note:** Output HDCP compliant status depends on input signal. When the input signal is with HDCP, then output signal is with HDCP and vice versa.

## 2.2 Rear Panel

| No. | Name | Description |
|---|---|---|
| ① | IN | HDMI input port. connect with HDMI or DVI source device such as DVD/ Blue-ray |
| ② | OUT | HDMI output ports, connect to HDMI displays, automatically capture the input resolution |
| ③ | DC 5V | Power socket, plug a DC 5V power adapter into this socket and tighten the screw. |

**Note:**

**a)** Pictures shown in this manual are for reference only, different model and specifications are subject to real product.

**b)** HDMI signal contains both HDMI video signal and embedded audio signal (PCM, Dolby Digital , DTS, DTS-HD) , while DVI signal contains solely video signal.

**c)** SUH4 is capable to switch input signal format according to the displays.

For example, when the input signal is HDMI and the display can only support DVI signal, SUH4 will switch the signal into DVI format.

# 3. System Connection

## 3.1 Usage Precautions

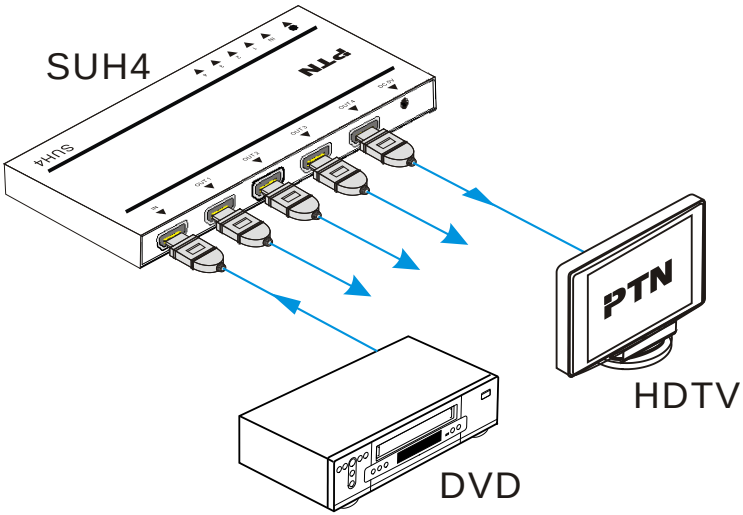
**1)** System should be installed in a clean environment and has a prop temperature and humidity.

**2)** All of the power switches, plugs, sockets and power cords should be insulated and safe.

**3)** All devices should be connected before power on.

## 3.2 System Diagram

The following diagram illustrates typical input and output connections that can be utilized with SUH4:




## 3.3 Connection Procedures

**Step1.** Connect a HDMI/ DVI source device (e.g. Blue-ray DVD) to the **HDMI INPUT** socket of SUH4 with HDMI cable.

**Step2.** Connect HDMI displays to **HDMI OUTPUT** sockets of SUH4 with HDMI cable.

**Step3.** Plug a DC 5V power adapter to the power port of SUH4.

**Note:** All the ports support hot-plug. It's important to know that hot plugging a display may result in splash screen at all connected output devices.

## 3.4 EDID Management

SUH4 comprises 1 HDMI input port & 4 HDMI output ports, EDID management helps distributing and routing signals from the source at the resolution of the first detected display (detecting from output 1~4).

For example: when output 1 connects with a 1080p display, SUH4 will select 1080p as output resolution and distribute 1080p signal to displays connected to output 1~4.

**Note:** If the displays connected to output 2~4 don't support 1080p signal, there will be no output on the displays.

## 3.5 Application

SUH4 has a good application in various occasions, such as computer realm, monitoring, conference room, big screen displaying, television education, command & control center and smart house etc.

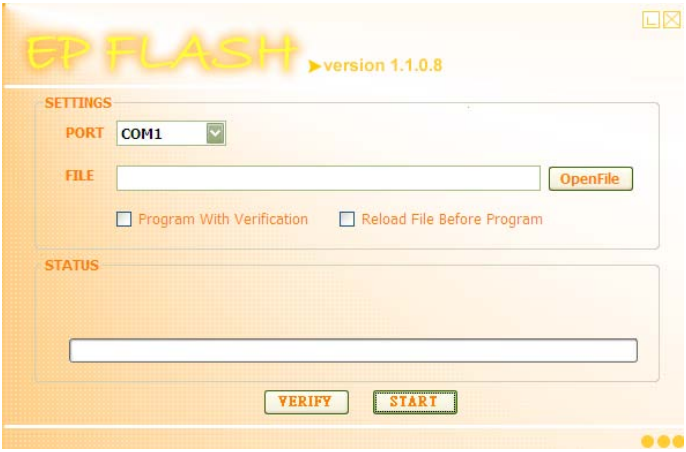
## 3.6 Firmware Upgrade

SUH4 boasts a USB port for online firmware upgrade. Follow these steps to upgrade firmware:

**Step1.** Copy the latest upgrade file (.hex) to PC.

**Step2.** Connect the USB ports of SUH4 and the PC via USB cable.

**Step3.** Double-click the file icon, it will enter the upgrade interface shown as below:




**Step4.** Select the right port number in the dropdown list of PORT, and click **OpenFile** to load the upgrade file. Click **Start** to start firmware upgrading.

# 4. Specification

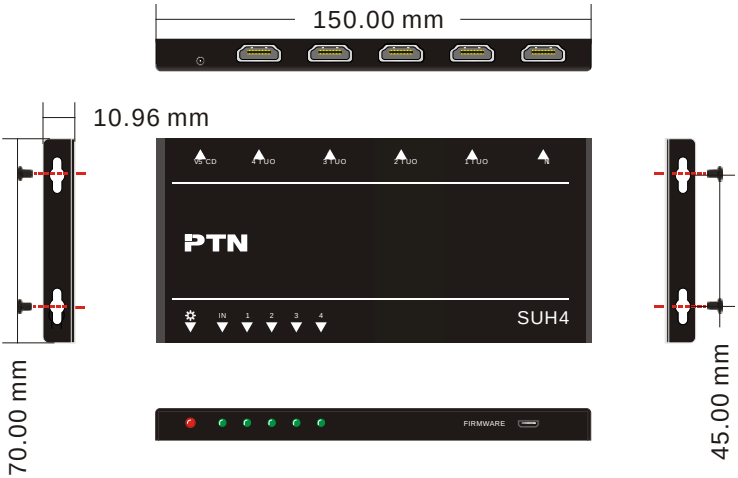
| | | | |
|---|---|---|---|
| **Video Input** | | | |
| Input | 1 HDMI | | |
| Input Connector | 1 female type A HDMI 1.4 | | |
| Min/ Max Signal Level | T.M.D.S. 2.9V~3.3V | | |
| Input Impedance | Differential 100Ω | | |
| **Video Output** | | | |
| Output | 4 HDMI | | |
| Output Connector | 1 female type A HDMI 1.4 | | |
| Min/ Max Signal Level | T.M.D.S. 2.9V~3.3V | | |
| Output Impedance | Differential 100Ω | | |
| **Video General** | | | |
| Max data rate | 10.2Gbit/s | | |
| Max Resolution | 4Kx2K, 1080P 3D@60Hz | | |
| Max Pixel Clock | 340MHz | | |
| Gain | 0dB | | |
| HDCP | Compliant with HDCP1.4 | | |
| EDID | In-built EDID management | | |
| **General** | | | |
| Temperature | -10 ~ +40℃ | Reference Humidity | 10% ~ 90% |
| Power | DC 5V 1A | Power Consumption | 3.6W (Max) |
| Dimension | (W*H*D)150x11x70mm | Weight | 0.12kg |

### 4.1 Supported Input Video Formats

| Input Resolution | HDMI | DVI |
|---|---|---|
| 720 x 480@60Hz | ☑ | ☑ |
| 720 x 480I@30Hz | ☑ | ☑ |
| 720 x 576@50Hz | ☑ | ☑ |
| 720 x 576I@25Hz | ☑ | ☑ |
| 1280 x720@50Hz | ☑ | ☑ |
| 1280 x720@60Hz | ☑ | ☑ |
| 1920 x 1080@25Hz | ☑ | ☑ |
| 1920 x 1080@50Hz | ☑ | ☑ |
| 1920 x 1080@60Hz | ☑ | ☑ |
| 1920 x 1080I@25Hz | ☑ | ☑ |
| 1920 x 1080I@30Hz | ☑ | ☑ |
| 3840 x 2160@25Hz | ☑ | |
| 3840 x 2160@30Hz | ☑ | |
| 1080P 3D@60Hz | ☑ | |

**Note:** SUH4 supports 4k& 3D HDMI signals, please adopt quality HDMI cables compliant with HDMI1.4 for better transmission when connecting 4K or 3D sources.

## 5. Panel Drawing



## 6. Troubleshooting & Maintenance

| Problems | Causes | Solutions |
|---|---|---|
| Color losing or no video signal output in HDMI display | The connecting cables may not be connected correctly or it may be broken. | Check whether the cables are connected correctly and in working condition. |
| | The display is not compatible with the present output resolution. | Make sure the resolution of the display(s) is compatible with the present resolution. |
| No HDMI signal output in SUH4 while local HDMI input is in normal working state | The connecting cables may not be connected correctly or it may be broken. | Check whether the cables are connected correctly and in working condition. |
| Splash screen in output devices | Poor quality of the connecting cable | Change for another cable of good quality. |
| Static becomes stronger when connecting the video connectors | Bad grounding | Check the grounding and make sure it is connected well. |

If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.

# 7. After-sales Service

If there appear some problems when running SUH4, please check and deal with the problems referring to this user manual. Any transport costs are borne by the users during the warranty.

1) **Product Limited Warranty:** PTN warrants that its products will be free from defects in materials and workmanship for **three years,** which starts from the first day you buy this product (The purchase invoice shall prevail).
   Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.
2) **What the warranty does not cover (servicing available for a fee):**
   - Warranty expiration.
   - Factory applied serial number has been altered or removed from the product.
   - Damage, deterioration or malfunction caused by:
     - Normal wear and tear
     - Use of supplies or parts not meeting our specifications
     - No certificate or invoice as the proof of warranty.
     - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
     - Damage caused by force majeure.
     - Servicing not authorized by PTN
     - Any other causes which does not relate to a product defect
   - Delivery, installation or labor charges for installation or setup of the product
3) **Technical Support:** Email to our after-sales department or make a call, please inform us the following information about your cases.
   - Product version and name.
   - Detailed failure situations.
   - The formation of the cases.

**Remarks**: For any questions or problems, please try to get help from your local distributor, or email PTN at: support@PTN-electronics.com.

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